

Date: Monday, 10/23/2006 12:05:31 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : CROSSTUBE EXTRUSION
Job Number : 29112	
Estimate Number : 10028	
P.O. Number : N/A	Part Number : D6006129
This Issue : 10/23/2006 S.O. No. : N/A	Drawing Number : D6006 REV A
Prsht Rev. : NC	Project Number : N/A
First Issue : N/A Type : LANDING GEAR	Drawing Revision : A
Previous Run : 26550	Material : N/A
Written By : <u>JA 06 10 23</u>	Due Date : 1/30/2007 Qty: 8 Um: Each
Checked & Approved By : <u>JA 06 10 23</u>	
Comment : Est Rev:C 04.06.15 Added tolerance to Step 2 KJ/JLM	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O: 2339

a) Order as per Dwg D6006

b) Material: 3.250 x 0.515 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strength = 66 ksi

e) Tolerance are per ASTM B210 (see details on Dwg D6006)

f) Material certification required

2.0	D6006129P	Crosstube material
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 8.0000 Each(s)
 Crosstube material

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

4.0	QC6	DIMENSIONAL CHECK
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Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6006

07/3/23 (10)

En 07/03/26 (x 10)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☐ No ☒ DQA: LP Date: 07/03/27
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/23/2006 12:05:31 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION

Job Number: 29112

Part Number: D6006129

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

MA97-28

07/03/26

8.0

QC21

FINAL INSPECTION/W/O RELEASE



(10)

Comment: FINAL INSPECTION/W/O RELEASE

07/03/27

Job Completion



07-03-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

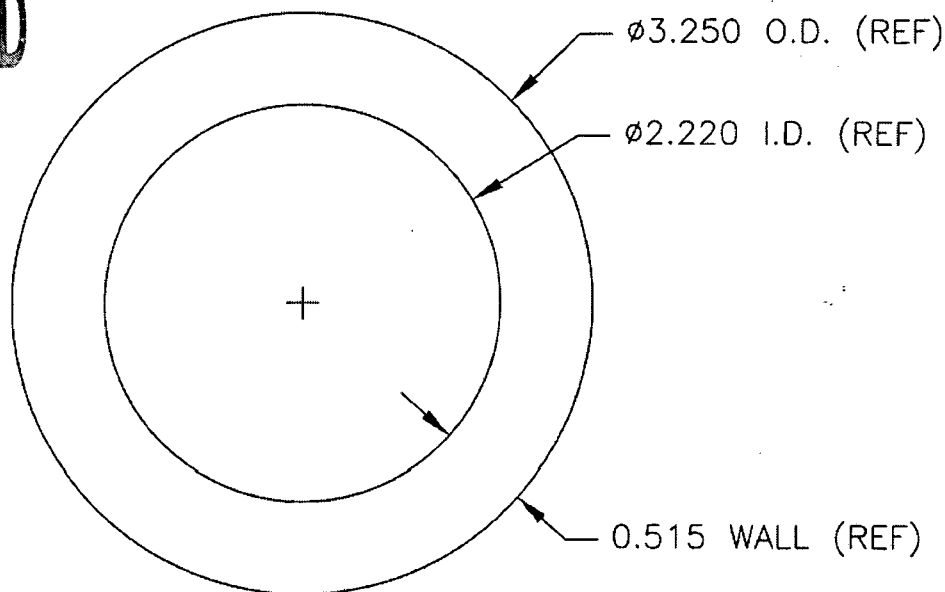
NOTE: Date & initial all entries



DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>A</i>	APPROVED <i>A</i>	DRAWING NO. D6006	REV. A SHEET 1 OF 1
DATE 00.11.17		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *A*



NOTES

- 1) D6006-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 129" LONG TUBE: D6006-129

- 2) MATERIAL: 3.250 OD x 0.515 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
O.D.: ± 0.008 MEAN (± 0.016 INCLUDING OVALITY)
WALL: ± 0.020 MEAN (± 0.052 INCLUDING ECCENTRICITY)
LENGTH: XXX $+0.188/-0.000$
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 29112

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invoice
31742

page: 4
date: 2.16.2007
customer: 40980

Part Number D6005-128 crosstube
Surface Finish max. RMS 25
Tolerances per ASTM B210 / your drawing D6005
Tubes protected with corrosion protective oil
Tubes line marked
Packing: seaworthy wooden cases

item	quantity	unit	price USD	unit	value USD
006	10,000	PC	578,64	PC	5.786,40

AWU article: 17955 / Tariff no. 76082081
Customer article: D6006-129 3.250 X 0.515 X 129
product: TUBES / seamless extruded / EN AW-7075 / round
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	82,550 mm	Tol.	+0,410	-0,410
inner diameter:	56,390 mm			
wall thickness:	13,080 mm	Tol.	+1,320	-1,320
fixed length	3277,000 mm	Tol.	+4,775	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455
straightness 0,25 mm / 304,8 mm / RMS outer 25
tol. on quantity +15 % -15 %
3.250" OD 0.515" Wall, 129" lengths
Part Number D6006-129 crosstube
Surface Finish max. RMS 25
Tolerances per ASTM B210 / drawing D6006
Tubes protected with corrosion protective oil
Tubes line marked
Packing: seaworthy wooden cases

item	quantity	unit	price USD	unit	value USD
007	24,000	PC	224,82	PC	5.395,68

AWU article: 21693 / Tariff no. 76082081
Customer article: D6007-106 2.250 X 0.350 X 106
product: TUBES / seamless extruded / EN AW-7075 / round
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	57,150 mm	Tol.	+0,300	-0,300
tol. for mean OD			+0,150	-0,150
inner diameter:	39,370 mm			
wall thickness:	8,890 mm	Tol.	+0,890	-0,890
fixed length	2692,000 mm	Tol.	+3,175	

inspection cert. acc. to EN10204/3.1 / RM 531 / Rp0,2: 455
straightness 0,25 mm / 304,8 mm / RMS outer 25
tol. on quantity +15 % -15 %
3.250" OD 0.515" Wall, 129" lengths

39.937.22

order confirmation

21531

page: 4
date: 11.02.2006
customer: 40980

Surface Finish max. RMS 25
Tolerances per ASTM B210 / your drawing D6005
Tubes protected with corrosion protective oil
Tubes line marked
Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit value	USD	delivery
006	8,000	PC	578,64	PC	4.629,12	March 16, 2007

AWU article: 17955 / Tariff no. 76082081
Customer article: D6006-129 3.250 X 0.515 X 129
product: TUBES / seamless extruded / EN AW-7075 / round
condition: T 6511 / AMS-QQ-A-200/11

outer diameter: 3,250 INCH Tol. +0,016 -0,016
inner diameter: 2,220 INCH
wall thickness: 0,515 INCH Tol. +0,052 -0,052
fixed length 129,000 INCH Tol. +0,188

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455
straightness 0,01 INCH / 1 FEET / RMS outer 25
tol. on quantity +15 % -15 %
3.250" OD 0.515" Wall, 129" lengths
Part Number D6006-129 crosstube
Surface Finish max. RMS 25
Tolerances per ASTM B210 / drawing D6006
Tubes protected with corrosion protective oil
Tubes line marked
Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit value	USD	delivery
007	22,000	PC	224,82	PC	4.946,04	March 16, 2007

AWU article: 21693 / Tariff no. 76082081
Customer article: D6007-106 2.250 X 0.350 X 106
product: TUBES / seamless extruded / EN AW-7075 / round
condition: T 6511 / AMS-QQ-A-200/11

outer diameter: 2,250 INCH Tol. +0,012 -0,012
tol. for mean OD +0,006 -0,006
inner diameter: 1,550 INCH
wall thickness: 0,350 INCH Tol. +0,035 -0,035
fixed length 106,000 INCH Tol. +0,125

inspection cert. acc. to EN10204/3.1 / RM 531 / Rp0,2: 455
straightness 0,01 INCH / 1 FEET / RMS outer 25
tol. on quantity +15 % -15 %
2.250" OD 0.350" Wall, 106" lengths
Part Number D6007-106 crosstube

Packinglist ALUnna AG

Customer PO	P.0.00002339
ALUnna ref. no.	21531/6
Date:	02.15.07

Boxmarking:

Dart Aerospace P.C.00002339 Box No...
D6006-129 Made in Germany
Dart,Hawkesbury ONT Canada

We hereby declare that the wooden packing material are totally free from bark and apparently

free from live plant pests

[illegible]

**ALUnna**

Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Dart Aerospace Ltd.
 Client: 1270 Aberdeen Street
 K6A1K7 Hawkesbury, ON Canada

Zeugnisnummer: 195/07
 Cert No.: / No. du certificat:
Bestellnummer: PO 00002339
 Order No. / No. de commande

Produkt: Rohre nahtlos gepresst
 Product / Produit: Tubes seamless extruded

Auftrag: 21531/6
 Our Reference/Notre Reference:

Spezifikation: AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace D6006
 Specification:

Werkstoff: 7075
 Alloy/Alliage:

Zustand: T 6511
 Temper/État

Abmessung: 3,250 INCH x 2,220 INCH x 0,515 INCH x 129,000 INCH
 Size / Dimension: D6006-129 3.250 X 0.515 X 129

Kennzeichnung: ALUnna-Cert No.195/07-7075-T6511-Cast No.01604562-AMS-QQA200/11-3.250" OD X 0.515"Wall-Heat No.4200-
 Marking/Marquage: Lot21531/6-1-P.O.00002339

Lieferung: pcs. lbs **Country of Manufacture: Germany**
 Delivered Material / Matériel délivré: 10 569

1. Chemische Analyse Chemical Analysis / analyse chimique

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
Charge/ min.			1,2		2,1	0,18	5,1						
Cast No. max.	0,40	0,50	2,0	0,30	2,9	0,28	6,1	0,20					
01604562	0,1	0,26	1,42	0,07	2,41	0,18	5,83	0,04	0	0			0,0001

Hydrogen content: <0,15 ccm/100 g Al

Elements without indication < 0,01 %

2. Mechanische Eigenschaften Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min. max.	77,0	66,0				
1	83,810	78,010	12,0		170	4200 - 10 pcs.
2	81,925	75,400	12,0		169	

RMS: outside 25 - max. 17,5 µ"

Ergebnis der Prüfungen: Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order
Resultats: Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD



Certified acc. to DIN EN ISO 9001:2000, valid until 2009-03-27
 Certificate No.: 001959 QM



ALUnna

15.02.2007

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Abnahmebeauftragter